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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/824,671	04/04/2001	Hiroaki Mashiko	N02-129931C/KK	1905

21254 7590 04/24/2002

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EXAMINER

GREENE, JASON M

ART UNIT	PAPER NUMBER
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1724

DATE MAILED: 04/24/2002

5

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/824,671

Applicant(s)

MASHIKO ET AL.

Examiner

Jason M. Greene

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) ____ is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☒ Claim(s) 1-4 and 6-15 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: .

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

2. The abstract of the disclosure is objected to because it contains the legal phraseology "comprises" in lines 2 and 7, the legal phraseology "comprising" in lines 2 and 3, and the legal phraseology "consisting of" in line 4. Correction is required. See MPEP § 608.01(b).

Claim Objections

3. Claims 1-4 and 6-15 are objected to because of the following informalities: The word "an" should be inserted between the words "for" and "ink" in line 1 of the claims. Appropriate correction is required.

4. Claim 4 is objected to because of the following informalities: The word "weight" should be inserted between the words "molecular" and "polyethylene" in line 4. Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:
- The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 12, the phrase "preferably" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1, 4, 6, 14, and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Japanese Published Patent Application JP 7-171318.

With regard to claims 1 and 6, JP 7-171318 discloses an air-permeable filter capable of being used in an ink cartridge comprising a laminate comprising a porous material layer comprising fluororesin (polytetrafluoroethylene) and an air-permeable substrate layer.

JP 7-171318 does not explicitly disclose the substrate having a tensile strength of at least 1 MPa or from 1 MPa to 1500 MPa.

JP 7-171318 teaches the air-permeable filter having a tensile strength of 38 kg/cm² (3.73 MPa) in col. 3, line 15 to col. 4, line 40 and page 2, lines 6-72 of the English language translation. JP 7-171318 teaches a similar air-permeable filter having the same porous material layer and a different air-permeable substrate layer having a tensile strength of 18 kg/cm² (1.76 MPa) in col. 3, line 15 to col. 4, line 40 and page 2, lines 6-72 of the English language translation. Since the first air-permeable filter is seen as having a tensile strength 20 kg/cm² (1.96 MPa) higher than the second air-permeable filter, it can be concluded that the air-permeable substrate layer of the first air-permeable layer has a tensile strength of at least 20 kg/cm² (1.96 MPa) since both air-permeable filters have the same porous material layer. Stated another way, since the two air-permeable filters have the same porous material layer, it can be concluded

that the porous material layer has a tensile strength of less than 18 kg/cm^2 (1.96 MPa), since that is the tensile strength of the second air-permeable filter, including both the porous material layer and the second air-permeable substrate layer. Since the first air-permeable filter has a tensile strength of 38 kg/cm^2 (1.96 MPa) and the porous material layer has a tensile strength of less than 18 kg/cm^2 (1.96 MPa), it can be concluded that the air-permeable substrate layer of the first air-permeable filter has a tensile strength of at least 20 kg/cm^2 (1.96 MPa).

Since the prior art is seen as disclosing a specific example of the tensile strength lying within the claimed ranges of at least 1 MPa and from 1 MPa to 1500 MPa, these claims are anticipated.

With regard to the air-permeable filter being for an ink cartridge, intended use has been continuously held not to be germane to determining the patentability of the apparatus (In re Finsterwalder, 168 USPQ 530). Purpose to which apparatus is to be put and expression relating apparatus to contents thereof during intended operation are not significant in determining patentability of an apparatus claim (Ex parte Thibault, 164 USPQ 666). Inclusion of the material worked upon by the by a structure being claimed does not impart patentability to the claims (In re Otto et al., 136 USPQ 458). A recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the structural limitation of that claimed (Ex parte Masham, 2 USPQ 2d 1647).

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With regard to claims 4, 14, and 15, JP 7-171318 discloses the porous material comprising polytetrafluoroethylene and the air-permeable substrate comprising an ultrahigh molecular weight polyethylene having a molecular weight of 4,000,000 in page 2, lines 6-11.

Since the prior art is seen as disclosing a specific example of the molecular weight lying within the claimed ranges of 300,000 or more and from 500,000 to 10,000,000, these limitations are anticipated.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 7-171318.

JP 7-171318 discloses an air-permeable filter having an air-permeable substrate layer and a polytetrafluoroethylene layer having a tensile strength of 38 kg/cm² (3.73 MPa) in col. 3, line 15 to col. 4, line 40 and page 2, lines 6-72 of the English language translation. JP 7-171318 further suggests that the air permeable substrate layer has a

tensile strength of at least 20 kg/cm² (1.96 MPa) in col. 3, line 15 to col. 4, line 40 and page 2, lines 6-72 of the English language translation

JP 7-171318 does not explicitly disclose the air-permeable substrate having a tensile strength from 3 MPa to 500 MPa.

Since one of ordinary skill in the art at the time the invention was made would have expected the porous polytetrafluoroethylene layer to have a very low tensile strength, one of ordinary skill in the art at the time the invention was made would have expected the vast majority of the tensile strength of the air-permeable filter to be due to the air-permeable substrate layer. Therefore, one of ordinary skill in the art at the time the invention was made would have expected the air-permeable substrate layer to have a tensile of approximately 38 kg/cm² (3.73 MPa).

Furthermore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to increase the tensile strength of the air-permeable substrate layer to provide an air-permeable filter having improved mechanical properties and rigidity.

11. Claims 1, 2, and 6-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over European Patent Application EP 0 811 479 A2 in view of Nitta.

With regard to claims 1, 6, and 7, EP 0 811 479 A2 discloses an air-permeable filter capable of being used in an ink cartridge comprising a laminate comprising a

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porous material layer comprising polyolefin and an air-permeable substrate layer comprising TYVEK ® in page 3, line 29 to page 5, line 41 and page 11, lines 46-54.

EP 0 811 479 A2 does not explicitly disclose the air-permeable substrate layer having a tensile strength of 1 MPa or more.

Nitta teaches TYVEK ® having a tensile strength of 527 kg/cm² (51.7 MPa) in col. 17, lines 1-30.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the material of Nitta into the air-permeable filter of EP 0 811 479 A2 to provide an air-permeable filter having good mechanical rigidity.

Since the prior art is seen as disclosing a specific example of the tensile strength lying within the claimed ranges of at least 1 MPa, from 1 MPa to 1500 MPa, and from 3 MPa to 500 MPa, these limitations are anticipated.

With regard to the air-permeable filter being for an ink cartridge, intended use has been continuously held not to be germane to determining the patentability of the apparatus (In re Finsterwalder, 168 USPQ 530). Purpose to which apparatus is to be put and expression relating apparatus to contents thereof during intended operation are not significant in determining patentability of an apparatus claim (Ex parte Thibault, 164 USPQ 666). Inclusion of the material worked upon by the by a structure being claimed does not impart patentability to the claims (In re Otto et al., 136 USPQ 458). A recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the structural limitation of that claimed (Ex parte Masham, 2 USPQ 2d 1647).

With regard to claim 2, EP 0 811 479 A2 discloses the air-permeability of the air-permeable substrate being 100 sec/100 cc (100 sec / 100 ml) as represented by Gurley number in page 12, line 25 to page 13, line 19.

Since the prior art is seen as disclosing a specific example of the air permeability lying within the claimed range of 300 sec/ 100 ml or less, this limitation is anticipated.

With regard to claim 8, EP 0 811 479 A2 discloses the air-permeable filter having a Gurley number (air permeability) of 100 sec/100 cc (100 sec / 100 ml in page 6, lines 22-23.

Since the prior art is seen as disclosing a specific example of the Gurley number (air permeability) lying within the claimed range of 0.1 sec/100 ml to 300 sec/ 100 ml, this limitation is anticipated.

With regard to claim 9, EP 0 811 479 A2 discloses the air-permeable filter having a Gurley number (air permeability) of 100 sec/100 cc (100 sec / 100 ml) to 200 sec/100 cc (200 sec/100 ml) in page 6, lines 22-23.

Since the prior art range is seen as overlapping the claimed range for Gurley number (air permeability) of 0.5 sec/100 ml to 100 sec/ 100 ml, a prima facie case of obviousness exists which be overcome through the showing of unexpected or unobvious results.

With regard to claims 10 and 11, EP 0 811 479 A2 discloses the average diameter of the pores in the porous material being 0.03 μm in page 12, line 30 to page 13, line 3.

Since the prior art is seen as disclosing a specific example of the average pore diameter lying within the claimed ranges of 10 μm or less and 0.01 μm to 5 μm , these limitations are anticipated.

With regard to claims 12 and 13, EP 0 811 479 A2 discloses thickness of the porous material being 25 μm in page 12, lines 30-45.

Since the prior art is seen as disclosing a specific example of the thickness lying within the claimed ranges of 2 μm or more and 10 μm to 1000 μm , these limitations are anticipated.

12. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Published Patent Application JP 7-171318 or European Patent Application EP 0 811 479 A2 and Nitta as applied to claim 1 above, and further in view of European Patent Application EP 0 831 572 A1.

JP 7-171318, EP 0 811 479 A2, and Nitta do not explicitly disclose at least one layer of the laminate having been rendered water-repellant and oil-repellant.

EP 0 831 572 A1 discloses a similar laminate filter wherein the porous material layer has been rendered water-repellant and oil-repellant in col. 4, line 51 to col. 5, line 16.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the water-repellant and oil-repellant coating of EP 0 831 572 A1 into the air-permeable filters of JP 7-171318 or European Patent Application EP 0 811 479 A2 and Nitta to prevent water and organic solvents from passing through the filter, as suggested by EP 0 831 572 A1 in col. 4, line 51 to col. 5, line 16.

13. Claims 5 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over European Patent Application EP 0 630 755 A2 or Japanese Published Patent Application JP 9-295406 in view of Japanese Published Patent Application JP 7-171318 or European Patent Application EP 0 811 479 A2 and Nitta.

With regard to claim 5, EP 0 630 755 A2 discloses an ink cartridge (55) comprising a space for receiving ink and at least one air vent (55e) in which a laminated air permeable filter (55c) is provided in Figs. 8, 9A, and 9B and col. 19, line 18 to col. 19, line 10.

JP 9-295406 discloses an ink cartridge (104) comprising a space for receiving ink and at least one air vent (not numbered) in which a laminated air permeable filter (100) is provided in Figs. 1-3.

EP 0 630 755 A2 and JP 9-295406 do not disclose the air-permeable filter comprising a laminate comprising a porous material layer comprising fluororesin or polyolefin and an air-permeable substrate layer having a tensile strength of 1 MPa or more.

JP 7-171318 discloses an air-permeable filter capable of being used in an ink cartridge comprising a laminate comprising a porous material layer comprising fluororesin (polytetrafluoroethylene) and an air-permeable substrate layer.

JP 7-171318 does not explicitly disclose the substrate having a tensile strength of at least 1 MPa or from 1 MPa to 1500 MPa.

JP 7-171318 teaches the air-permeable filter having a tensile strength of 38 kg/cm² (3.73 MPa) in col. 3, line 15 to col. 4, line 40 and page 2, lines 6-72 of the English language translation. JP 7-171318 teaches a similar air-permeable filter having the same porous material layer and a different air-permeable substrate layer having a tensile strength of 18 kg/cm² (1.76 MPa) in col. 3, line 15 to col. 4, line 40 and page 2, lines 6-72 of the English language translation. Since the first air-permeable filter is seen as having a tensile strength 20 kg/cm² (1.96 MPa) higher than the second air-permeable filter, it can be concluded that the air-permeable substrate layer of the first air-permeable layer has a tensile strength of at least 20 kg/cm² (1.96 MPa) since both air-permeable filters have the same porous material layer. Stated another way, since the two air-permeable filters have the same porous material layer, it can be concluded that the porous material layer has a tensile strength of less than 18 kg/cm² (1.96 MPa), since that is the tensile strength of the second air-permeable filter, including both the porous material layer and the second air-permeable substrate layer. Since the first air-permeable filter has a tensile strength of 38 kg/cm² (1.96 MPa) and the porous material layer has a tensile strength of less than 18 kg/cm² (1.96 MPa), it can be concluded that

the air-permeable substrate layer of the first air-permeable filter has a tensile strength of at least 20 kg/cm² (1.96 MPa).

EP 0 811 479 A2 discloses an air-permeable filter capable of being used in an ink cartridge comprising a laminate comprising a porous material layer comprising polyolefin and an air-permeable substrate layer comprising TYVEK ® in page 3, line 29 to page 5, line 41 and page 11, lines 46-54.

EP 0 811 479 A2 does not explicitly disclose the air-permeable substrate layer having a tensile strength of 1 MPa or more.

Nitta teaches TYVEK ® having a tensile strength of 527 kg/cm² (51.7 MPa) in col. 17, lines 1-30.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the air-permeable filters of JP 7-171318 or EP 0 811 479 A2 and Nitta into the ink cartridges of EP 0 630 755 A2 or JP 9-295406 to provide vent filters for the ink cartridges having good mechanical rigidity to prevent the filters from being damaged in transit to prevent ink from being lost from the cartridge.

With regard to claim 16, EP 0 630 755 A2 discloses the porous material of the air-permeable filter facing an inner space of the ink cartridge in Figs. 8, 9A, and 9B and col. 19, line 18 to col. 19, line 10. JP 9-295406 discloses the porous material of the air-permeable filter facing an inner space of the ink cartridge in Figs. 1-3.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The Gragg et al., Kasugayama et al., Matson et al., and Riedy disclose similar air-permeable filters.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M. Greene whose telephone number is (703) 308-6240. The examiner can normally be reached on Tuesday - Friday (7:00 AM to 5:30 PM).

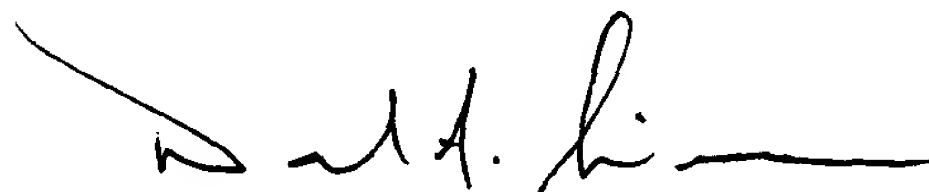
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Simmons can be reached on (703) 308-1972. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Jason M. Greene
Examiner
Art Unit 1724



jmg
April 19, 2002



David A. Simmons
Supervisory Patent Examiner
Technology Center 1700